(19) World Intellectual Property Organization

International Bureau OMP





(43) International Publication Date 7 October 2004 (07.10.2004)

PCT

(10) International Publication Number WO 2004/086771 A3

(51) International Patent Classification7: H04N 13/04

(21) International Application Number:

PCT/GB2004/001364

(22) International Filing Date: 29 March 2004 (29.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0307077.8

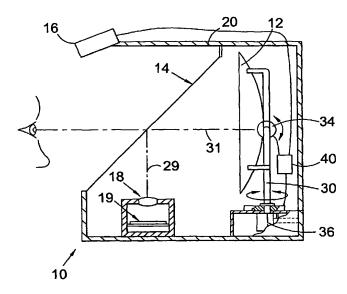
27 March 2003 (27.03.2003) GE

- (71) Applicant (for all designated States except US): UNIVER-SITY OF STRATHCLYDE [GB/GB]; McCance Building, 16 Richmond Street, Glasgow G1 1XQ (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MCKAY, Stuart [GB/GB]; Department of DMEM, James Weir Building, University of Strathclyde, 75 Montrose Street, Glasgow G1 1XJ (GB). MASON, Steven [GB/GB]; Department of DMEM, James Weir Building, University of Strathclyde,

- 75 Montrose Street, Glasgow G1 1XJ (GB). MAIR, Gordon [GB/GB]; Department of DMEM, James Weir Building, University of Strathclyde, 75 Montrose Street, Glasgow G1 1XJ (GB). HARRISON, Colin [GB/GB]; Department of DMEM, James Weir Building, University of Strathclyde, 75 Montrose Street, Glasgow G1 1XJ (GB).
- (74) Agents: MACDOUGALL, Donald, Carmichael et al.; Marks & Clerk, 19 Royal Exchange Square, Glasgow G1 3AE (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: A STEREOSCOPIC DISPLAY



(57) Abstract: A stereoscopic display (10) comprising a concave mirror (12) that acts as a directional screen, a projection system (18) including a plurality of reflecting surfaces for directing first and second images (19) onto focusing means, and a beam splitter (14) between the mirror (12) and the focusing means for directing light from the focusing means towards the mirror (12) whilst allowing light reflected from the mirror (12) to be transmitted therethrough. In a preferred embodiment, the focusing means comprise a single lens for focusing both of the first and second images toward the concave mirror. Ideally, a tracking system (16) is employed to detect movement of a user's head and/or eyes and move the concave mirror so that it tracks any such detected movement.



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 20 January 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Interr il Application No PC1/up2004/001364

			. 3., 40230., 60230.			
A. CLASSIF IPC 7	FICATION OF SUBJECT MATTER H04N13/04					
	International Patent Classification (IPC) or to both national classificat	tion and IPC				
B. FIELDS S	SEARCHED cumentation searched (classification system followed by classification	n symbols)				
IPC 7	HO4N	,)				
	lon searched other than minimum documentation to the extent that su					
Electronic da	ata base consulted during the international search (name of data base	e and, where practical	al, search terms used)			
EPO-Int	ternal, PAJ					
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT					
Category °	Citation of document, with Indication, where appropriate, of the rele	evant passages	Relevant to claim No	o		
Y	US 4 799 763 A (THURSTON MARLIN O ET AL) 24 January 1989 (1989-01-24) cited in the application column 1, line 52 - column 2, line 6;		17	_		
1	figures 6,7		1.0			
A			1,9			
Υ	US 2003/025996 A1 (MASON STEVEN 6 February 2003 (2003-02-06) cited in the application paragraphs '0021!, '0022!	17				
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 12, 3 January 2001 (2001-01-03) & JP 2000 249975 A (MINOLTA CO LT 14 September 2000 (2000-09-14) abstract	TD), -/	1,9,17			
X Furti	ther documents are listed in the continuation of box C.		y members are listed in annex.			
 Special categories of cited documents: A' document defining the general state of the art which is not considered to be of particular relevance E' earlier document but published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention Calcument of particular relevance; the claimed invention 						
which citation	ent which may throw doubts on priority claim(s) or n is cited to establish the publication date of another on or other special reason (as specified)	idered novel or cannot be considered to niive step when the document is taken alone ticular relevance; the claimed invention idered to involve an inventive step when the mbined with one or more other such docu-				
°P° docume	other means "P" document published prior to the international filing date but ments, such combination being obvious to a person skilled in the art.					
	later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report					
1	16 June 2004		1 2. 11. 2004			
Name and	mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL. – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.	Authorized officer				
I	Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,	Bequet	ζ, l			

Intel Application No
PCT, ap2004/001364

		PCT, up2004/001364					
C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT							
ategory °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.					
alegory °	US 3 447 854 A (MINTER ROBERT L) 3 June 1969 (1969-06-03) cited in the application column 2, line 3 - line 8	Relevant to claim No.					

Form PCT/ISA/210 (continuation of second sheet) (January 2004)

onal application No. CT/GB2004/001364

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)							
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:							
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:							
Claims Nos.: because they relate to parts of the international Application that do not comply with the prescribed requirements to such an extent that no meaningful international Search can be carried out, specifically:							
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).							
Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)							
This International Searching Authority found multiple inventions in this international application, as follows:							
see additional sheet							
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.							
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.							
3. As only some of the required additional search fees were timely paid by the applicant, this international Search Report covers only those claims for which fees were paid, specifically claims Nos.:							
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the Invention first mentioned in the claims; it is covered by claims Nos.: 1-13,17-20							
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.							

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13, 17-20

Focalisation

2. claims: 14-16

tracking

ormation on patent family members

Intel al Application No PCI/GB2004/001364

Patent document clted in search report		Publication date	•	Patent family member(s)	Publication date
US 4799763	Α	24-01-1989	NONE		
US 2003025996	A1	06-02-2003	NONE		
JP 2000249975	Α	14-09-2000	NONE		
US 3447854	Α	03-06-1969	NONE		